Amendments to the claims:

This listing of claims will replace all prior version, and listing, of claims in the application

Listing of the claims:

1-23. (Cancelled)

24. (New) A material comprising,

a water permeable layer comprising gel particles that expand when a temperature of a fluid in contact with the gel particles is below a phase transition temperature of the gel particles and that contract when the temperature of the fluid in contact with the gel particles is above the phase transition temperature of the gel particles.

25. (New) The material of claim 24, wherein the phase transition temperature of the gel particles is a volume phase transition critical temperature.

26. (New) The material of claim 24, wherein the water permeable layer limits the flow of the fluid through the material when the temperature of the fluid is below the phase transition temperature of the gel particles.

27. (New) The material of claim 24, wherein the water permeable layer limits the flow of the fluid through the material when the gel particles expand.

28. (New) The material of claim 24, wherein the water permeable layer permits an increase in the flow of the fluid through the material when the temperature of the fluid is above the phase transition temperature of the gel particles.

29. (New) The material of claim 24, wherein the water permeable layer permits an increase in the flow of the fluid through the material when the gel particles contract.

30. (New) The material of claim 24, wherein the phase transition temperature is approximately a desired skin surface temperature.

31. (New) The material of claim 24, wherein the phase transition temperature of the gel particles is between about 18°C and about 25°C.

32. (New) The material of claim 24, wherein the water permeable layer comprises an open cell foam substrate.

33. (New) The material of claim 24, wherein the gel particles comprise a hydrogel.

34. (New) The material of claim 24, wherein the gel particles comprise a hydrophobic monomer.

35. (New) The material of claim 34, wherein the hydrophobic monomer is N-tert-butylacrylamide.

36. (New) The material of claim 24, comprising a layer of neoprene material.

37. (New) The material of claim 24, wherein a thickness of the water permeable layer increases when the temperature of the fluid in contact with the gel particles is below the phase transition temperature of the gel particles.

38. (New) The material of claim 24, wherein a thickness of the water permeable layer decreases when the temperature of the fluid in contact with the gel particles is above the phase transition temperature of the gel particles.

39. (New) The material of claim 24, wherein heat loss through the material decreases when the temperature of the fluid in contact with the gel particles is below the phase transition temperature of the gel particles.

40. (New) The material of claim 24, wherein heat loss through the material increases when the temperature of the fluid in contact with the gel particles is above the phase transition temperature of the gel particles.

41. (New) The material of claim 24, wherein the material is used in a wetsuit.

42. (New) A material comprising;

a water permeable layer comprising gel particles that absorb a fluid when a temperature of the fluid in contact with the gel particles is below a volume phase transition critical temperature of the gel particles and that expel the fluid when the temperature of the fluid in contact with the gel particles is above the volume phase transition critical temperature of the gel particles.

43. (New) A material for controlling the flow of water to maintain a desired skin surface temperature of a wearer, the material comprising

an outer layer; and

an inner layer comprising gel particles embedded in a matrix, the gel particles having a volume phase transition critical temperature (VPTCT) at approximately the desired skin surface temperature,

wherein the gel particles in the matrix absorb the fluid and expand to restrict flow when the temperature of the fluid is below the gel volume phase transition critical temperature and contract and expel the fluid to increase flow of the fluid when the temperature of the fluid is above the gel volume phase transition critical temperature.

44. (New) The material of claim 43, wherein the matrix comprises a foam layer.

45. (New) The material of claim 43, wherein the outer layer comprises neoprene.

46. (New) The material of claim 43, further comprising a second inner layer inside of the inner layer, the second inner layer having a slick surface for contact with the wearer.

47. (New) The material of claim 43, further comprising a second outer layer outside of the outer layer.

48. (New) The material of claim 43, wherein the gel is a hyrdogel having a VPTCT in the range of about 18°C to about 25°C.

49. (New) The material of claim 43, wherein the inner layer includes gel particles in an amount approximately 5% to 80% by weight of total dry weight of the matrix.

50. (New) The material of claim 43, wherein the gel particles comprise poly(N-isopropylacrylamide).

51. (New) The material of claim 50, wherein the gel particles comprise a hydrophobic monomer.

52. (New) The material of claim 51, wherein the hydrophobic monomer is N-tert-butylacrylamide.

53. (New) The material of claim 43, wherein the VPTCT is approximately 18°C.

54. (New) The material of claim 43, wherein a thickness of the water permeable layer increases when the temperature of the fluid in contact with the gel particles is below the phase transition temperature of the gel particles.

55. (New) The material of claim 43, wherein a thickness of the water permeable layer decreases when the temperature of the fluid in contact with the gel particles is above the phase transition temperature of the gel particles.

56. (New) The material of claim 43, wherein heat loss through the material decreases when the temperature of the fluid in contact with the gel particles is below the phase transition temperature of the gel particles.

57. (New) The material of claim 43, wherein heat loss through the material increases when the temperature of the fluid in contact with the gel particles is above the phase transition temperature of the gel particles.